Adverse effects in surgical patients: knowledge of the nursing professionals

Eventos adversos em pacientes cirúrgicos: conhecimento dos profissionais de enfermagem

Elena Bohomol[1]
Juliana de Abreu Tartali[2]

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Operating room nursing; Education, nursing; Nursing assessment; Patient safety; Quality of health care; Health knowledge, atitudes, practice

Descritores
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Abstract

Objective: Verify the knowledge of the nursing team about adverse effects in patients at the surgical center, point out possible causes, identify whose is the responsibility for these causes and verify the need of notification.
Methods: Descriptive research performed by questionnaire with ten statements about causes for the occurrence of adverse effects and four settings, carried out with 31 nursing professionals from the surgical center of a private hospital.
Results: The most frequent causes have been routine in programming elective procedures and inefficient communication between medical and nursing teams. All settings have been identified as adverse events with a necessity to be notified. The patient's safety is not seen as a responsibility of the entire professional team.
Conclusion: Nurses must defend the patient's interests, know the risks inherent to the surgical process and warn team members about possible problems that may come up.

Resumo

Objetivo: Verificar o conhecimento da equipe de enfermagem sobre eventos adversos em pacientes em centro cirúrgico, apontar possíveis causas, identificar de quem é a responsabilidade pelos mesmos e necessidade de notificação
Métodos: Pesquisa descritiva realizada por meio de questionário com dez afirmativas sobre causas para a ocorrência de eventos adversos e quatro cenários, conduzida com 31 profissionais de enfermagem do centro cirúrgico de um hospital privado.
Resultados: As causas mais freqüentes foram a rotina na programação de procedimentos eletivos e comunicação ineficaz entre a equipe de enfermagem e médica. Todos os cenários foram identificados como eventos adversos e com necessidade de notificação. A segurança do paciente não é vista como responsabilidade de toda a equipe multiprofissional.
Conclusão: A enfermagem deve defender os interesses dos pacientes, conhecer os riscos inerentes ao processo cirúrgico e alertar os integrantes da equipe sobre os possíveis problemas que possam ocorrer.

Corresponding author
Elena Bohomol
Napoleão de Barros street, 754, Vila Clementino, São Paulo, SP, Brazil. ZIP Code: 04024-002
ebohomol@unifesp.br

[1]Escola Paulista de Enfermagem, Universidade Federal de São Paulo, São Paulo, SP, Brazil.
[2]Hospital São José, Beneficência Portuguesa de São Paulo, São Paulo, SP, Brazil.
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Introduction

Patient safety is the absence of unnecessary harms to the patient, as well as healthcare-related harms. Adverse events are incidents taking place during health care services resulting in harms to the patient, which can be physical, social or psychological, including injuries, pain, incapacity, death.[1] Special attention should be paid to the adverse events linked with the surgical procedure, since the surgical center is where they occur most often in a hospital and they can be avoided in 43% of cases.[2,3]

These events are exemplified by infections in the surgical site, performance of procedures on the wrong side of the body, inadequate surgical positioning, anesthetics problems, and inadequate administration of medication. They increase the length of stay and the risk of death, beside increasing the cost of hospitalization.[3-5]

It is estimated that worldwide about 240 million surgeries are performed every year, and that there will be an increase in the number of illnesses requiring surgery in the coming decade, represented by cardiovascular diseases, trauma, cancer, linked to a longer life expectancy in the population. It is also assumed that there are about 3% to 16% of surgical complications, resulting in 7 million cases of incapacitation, with a mortality index between 0.4% and 0.8%.[6]

The World Health Organization, given the gravity and the dimension of the problem, propose standards to be applied by health institutions to improve surgical care safety. The adoption of a checklist at three moments is recommended: before anesthetics induction, before skin incision and before the patient leaves the surgical room.[6]

The success of the surgical treatment depends on the assistance provided in a comprehensive and individualized manner, specific at every moment of the preparation period and including the pre-operative, trans-operative and post-operative stages, in order to provide the patient with a more efficient and fast recovery, i.e., quality healthcare.[7] The quality and safety of the patient are responsibilities of every professional involved, including the nursing team, which plays a fundamental role in preventing adverse events.

The objective of this study was to verify the knowledge of the nursing team about adverse surgical events, pointing the possible causes of their occurrence, identifying whose is the responsibility and whether there is a need of notification to the persons responsible for the unit.

Methods

Cross-sectional and descriptive study, developed at a surgical center of a private hospital in the city of Sao Paulo, in April 2010. The sample comprised nursing professionals working at the unit, a total of 40 people: eight nurses, 17 nursing technicians, and 15 nursing aides. Management professionals were excluded, as they did not work directly inside the operating room.

The data were collected by means of a structured guide created specifically for this purpose and validated by three judges specialized in the area. The research instrument consisted of three parts: (1) questions to characterize the team; (2) statements representing eventual causes of adverse surgical events, so that the level of agreement can be determined by means of the Likert Scale; and (3) setting analyses with situations of healthcare practice in the surgical environment to determine whether they were adverse events, who was accountable for the situation, and whether there was a need to notify the people in charge of the unit.

The data were analyzed using descriptive statistic techniques and were presented in absolute and relative figures as tables.

The development of the study met the national and international ethics norms for research with human beings.

Results

Forty questionnaires were distributed and 31 were returned (77.5%). The sample comprised nursing technicians (67.7%), nurses (22.6%) and nursing aides (9.7%). The majority (58.0%) had graduated between 2 to 6 years before and 6.5% of them were newly graduated.

The most frequent cause of adverse surgical events is "the routine in programming elective procedures" (35.5%), followed by the statement that "the member of the nursing team is overburdened or distracted with other patients, co-workers or events in the unit", "the shift pass-down is performed carelessly" and "lack of communication between the nursing team member and the medical team", accounting for 32.2% of the participants' opinions (Table 1). Nevertheless, when these situations are added to the opinion of those who believe them to be frequent causes, there is an increase in the percentage of answers (67.8%, 45.1% 54.8% and 58.1%, respectively), pointing out the fact that the routine act in the daily work life of the professionals involved in elective procedures and the communication problems between the professionals are strong reasons for the occurrence of adverse effects.

A significant number of responses were observed where the reasons given are considered of low frequency and of zero frequency, which, when added, are represented by "no confirmation of the patient's identification with the surgical warning and surgical setting" (80.6%); "no confirmation of the materials and equipment used in the procedure" (80.7%) "reprisals by the medical team when warning of possible problems" (71%) or "omission of the team due to a lack of leader autonomy" (71%).

All settings described have been considered adverse events (Table 2). Thus 29 (96.7%) persons have understood that failing to count compresses in open surgeries is an event, just as 25 (92.6%) have positively responded to the situation regarding the failure to apply preventive measures for thromboembolism. It was verified that 15 (55.6%) professionals classified the non-adequacy of the room according to the laterality of the surgical procedure as an adverse event, just as the disposal of a surgical instrument by 26 (92.9%) professionals.

In every setting, it was pointed out that the situation should be reported to those responsible for the unit. However, the fact stands out that the percentage for notification does not match what the group understands as an adverse event. It is verified that the near totality of the persons who have understood as adverse event the lack of compress counting (7.2%) believes that such fact should not be notified. The situation repeats itself in relation to the use of preventive measures for thromboembolism (24%) and to the reorganization of the room according to the laterality of the procedure (44%). Only in the final setting, related to the non-forwarding of the part for anatomopathological testing, all participants understood that the situation should be notified, although 7.1% of them believe it is not an adverse effect.

The setting related to the reordering of the room for the arthroscopy procedure displayed a polarization of almost 50/50 on whether it is an adverse effect or whether it should be reported.

As to the responsibility for the situations described in the settings, it was verified that some-

Table 1. Statements about the reasons why adverse surgical events take place

Statements	Very often (%)	Frequent cause (%)	Low frequency (%)	Zero frequency (%)
The nursing team does not confirm the patient's identification against the surgical note and surgical case	4(12.9)	2(6.5)	12(38.7)	13(41.9)
The member of the nursing team is overloaded or distracted by other patients, co-workers or events in the unit	10(32.2)	4(12.9)	14(45.2)	3(9.70)
There is no marking on the surgery spot	8(25.9)	6(19.3)	11(35.5)	6(19.3)
No confirmation is made of the surgical materials and equipment to be used in the procedure	-	6(19.3)	14(45.2)	11(35.5)
The shift pass-down is performed carelessly	10(32.2)	7(22.6)	8(25.9)	6(19.3)
Routine in programming elective procedure	11(35.5)	10(32.3)	4(12.9)	6(19.3)
The member of the nursing team is reprehended by some member of the medical team due to his or her behavior in warning about possible problems	6(19.3)	3(9.7)	13(42.0)	9(19.0)
The nursing team member ceases to work at the work environment due to lack of autonomy of the leader	6(19.3)	3(9.7)	13(42.0)	9(19.0)
The patient arrives in the operating room carrying with complementary test results of another patient	2(6.5)	12(38.7)	10(32.2)	7(22.6)
There is lack of communication between the nursing team member and the medical team	10(32.2)	8(25.9)	6(19.3)	7(22.6)

Table 2. Settings about adverse surgical events

Settings	Yes (%)	Non (%)
A procedure of abdominal videolaparoscopy was converted into open surgery. Compress counting was not performed neither at the beginning nor at the end of the procedure		
Is that an adverse event?	29(96.7)	1(3.3)
Should it be notified?	26(92.8)	2(7.2)
The responsibility is of the team		
Medical	11(35.5)	20(64.5)
Nursing	17(54.8)	14(45.2)
Mutidisciplinary	3(9.7)	28(90.3)
A 68 year old woman, smoker, was submitted to a major elective surgical procedure. No anti-thrombolytic socks were placed and no lower limb massaging device was applied as preventive measures against thromboembolism.		
Is that an adverse event?	25(92.6)	2(7.4)
Should it be notified?	19(76.0)	6(24.0)
The responsibility is		
Of the medical team	11(36.7)	19(63.3)
Of the nursing team	12(40.0)	18(60.0)
Multidisciplinary	7(23.3)	23(76.7)
On a surgery day, two knee arthroscopies have been scheduled. The room was set up for the first surgery, on the right knee, with the equipment positioned on the left side. However, the patient that was called in first was supposed to undergo arthroscopy of the left knee. The medical team insisted in performing the procedure, alleging that it was unnecessary to reorganize the room.		
Is that an adverse event?	15(55.6)	12(44.4)
Should it be notified?	14(56.0)	11(44.0)
The responsibility is		
Of the medical team	11(45.8)	13(54.2)
Of the nursing team	7(29.2)	17(70.8)
Multidisciplinary	6(25.0)	18(75.0)
A 78 year-old man underwent a colectomy due to rectum cancer. When the surgical part is removed, the room assistant asked the instrument master about its destination, and was told it should be disposed of. Three days later, the surgeon requests the pathological anatomy report for that part.		
Is that an adverse event?	26(92.9)	2(7.61)
Should it be notified?	26(100.0)	-
The responsibility is		
Of the medical team	14(50.0)	14(50.0)
Of the nursing team	9(32.1)	19(67.9)
Multidisciplinary	5(17.9)	23(82.1)

times it lies with the nursing team (in two settings) and other times on the medical team (two settings). A large proportion of the participants believe that the application of thromboembolism prevention measures (40%) and compress counting (54.8%) are a role specific to the nursing team. On the other hand, the adequacy of the room and the forwarding of parts for pathological anatomy are understood as a task of the medical team (45.8% and 50%, respectively).

The findings of the table have revealed that, for all settings, a smaller percentage of answers have deemed that everyone in the multidisciplinary team are responsible for the safety acts at a surgical center.

Discussion

The nursing care at a surgical center is performed by nurses, technicians and aides - the latter two under supervision of the former. This fact requires attention of the leadership to the implementation of permanent educational programs to subsidize the development of competencies in the specific and individualized care to surgical patients, accident prevention and risk management, considering the specificities of the area, both by number of specialties and the characteristics of the medical teams.[3,5]

The study has contributed to identify the causes of adverse surgical events, of which the most fre-

quent was "routine in the programming elective procedures". The care of patients in elective and known surgeries is, in a certain way, easier at a surgical center, unlike the emergency situations which, along with last-minute scheduling, use of unusual equipment for surgeries, time pressure for the start or completion of the procedure, are pointed out as causes for the occurrence of adverse events.[5] There is a current concern by institutions to have an environment and a system to offer care to the surgical patient based on philosophical and structural precepts, so as to offer the best possible working conditions and to not compromise the final results for the patient.[8] Therefore, even in a routine context, caution should be exerted, because that fact may represent a greater flexibility in the compliance with rules, triggering events that place patient safety at risk.

This study has shown that "the lack of communication between the nursing team member and the medical team" is a strong reason for the occurrence of adverse events, suggesting that good healthcare relies on accurate and efficient communication between professionals".[3] The significance of this finding is confirmed by the data of the event report from an American credentials program where 843 events were registered and, in the root cause analysis, communication problems have been pointed out in 533 (63.2%) of occurrences.[9] The surgical center unit is a stressful environment, with a great number of interruptions and, from among the aspects that may contribute to inefficient communication, arrogance and hostility by the medical team stands out.[3,7] Therefore it is not unusual for the nursing team to feel intimidated and thus omit important alerts that may prevent problems for the patient, out of the fear of being reprehended or retaliated.[7,10] As an alternative to facing the problem, the nursing department should implement assistance protocols, such as a safe surgery checklist , in addition to using tools for efficient communication involving the multidisciplinary team.[4,8-10]

The statements with the highest percentage of low or zero frequency are related to lack of problems with checking material and equipment, as well as with checking the patient's identification. They arise out of a maturing of the institution for the implementation of measures to prevent adverse events. Therefore the unit's management should be involved in foreseeing and providing the necessary resources for its functioning, in addition to catering to the demands of the service with as little stress to workers as possible. The lack of organization of the service is an aspect related to adverse events.[8]

The statements that deal with the leader's autonomy, providing safety to the team and the absence of reprisals when safety issues are raised indicates a higher level of maturity of the nursing team in dealing with patient safety issues in the surgical environment. Nurses should ponder over their activities in the surgical centers, in order to effect changes in its structural organization, in order to pursue advances and reach new milestones for the profession, suggesting new roles in this field of work.[7]

Although the study has shown that every setting can be considered adverse events and that they all should be notified, there are situations that are still unclear for the team, especially in matters of near-failures, as is the context presented in the adequacy of the room for laterality conformity in the operating procedure. Near-failure is an incident that still has not reached the patient, but its recurrence may pose a great risk of adverse consequences for the patient.[1] Therefore, monitoring surgical near-failures permits to review the assistance processes and promoting measures that generate greater safety in the operation.

The findings highlight a fragmented view of the patient's safety in that environment, and the patient's safety is seen as the responsibility of a professional category (either the medical team or the nursing team). If, on the one hand, the statements pointed to a certain maturity of the nursing team, the settings, on the other hand, revealed that the responsibility for safety is not equally shared by all teams. The implementation of well-defined policies related to the safety procedures and the continuous recollection of the codes of conduct of the professionals may provide a better understanding of the safety culture in that sector.[9,10]

The limits of this study are related to cross-sectional design, which does not allow setting forth a relationship between cause and effect. The results

are limited to the investigated sample, not allowing generalizations to the population of professionals working in the surgical area.

Conclusion

The nursing team researched is aware of what are adverse surgical events and of their possible causes. The analyzed settings show the understanding of the situations herein presented as adverse surgical events and the importance of their notification. It was verified that there is a deficiency in understanding what is near-failure in the surgical environment, as well as that there are different understandings as to whose is the responsibility for adverse surgical events.

Collaborations

Bohomol E has collaborated with the conception of this project, writing of the article, the relevant critical review of its contents and the final approval of its final version to be published. Tartali JA has contributed to the conception of this project, the collection, analysis and interpretation of the data, writing of the article and relevant critical review of its intellectual contents.

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